Massachusetts Department of Environmental Protection
Source Water Assessment and Protection (SWAP) Report
for
Ashmere Lake Nominee Trust

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- Inventory land uses within the recharge areas of all public water supply sources;
- Assess the susceptibility of drinking water sources to contamination from these land uses; and
- Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared:
November 7, 2003

Table 1: Public Water System (PWS) Information

PWS Name	**Ashmere Lake Nominee Trust**
PWS Address	**State Route 143**
City/Town	**Hinsdale, Massachusetts**
PWS ID Number	**1132012**
Local Contact	**Mr. Michael Viner**
Phone Number	**413-665-7781**

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	1132012-01G	182	478	Moderate

Introduction

We are all concerned about the quality of the water we drink. Drinking water supplies may be threatened by many potential sources of contamination, including septic systems, road de-icing, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

Ashmere Lake Nominee Trust (ALNT) is a two building apartment complex, located on the shore of Ashmere Lake in the town of Hinsdale, a small, rural, hilltown community in western Massachusetts. The facility is located immediately north of State Route 143. Although there is both a municipal water and sewer system in Hinsdale, only the municipal sewer serves this section of town. Therefore, ALNT is served by one water supply well and wastewater is disposed through the municipal sewer system. The buildings house twelve and five apartments, respectively; the system also serves a single family home. The system is served by a single 6-inch diameter, 575-feet deep, bedrock well located approximately 25 feet from the road.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

The Zone I is the protection area immediately surrounding the wellhead, while the IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. The Zone I and Interim Wellhead Protection Area (IWPA) radii, based on the daily pumped volume from the well, are 182 feet and 478 feet, respectively. Please refer to the attached map of the Zone I and IWPA.

Well #1 is located in an area of relatively thin overburden material of till. The bedrock is mapped as the Washington Gneiss, rusty weathering schist with layers of blue-quartz conglomerate and dacite. Although the well has approximately 270 feet of casing, there is no record or evidence of a confining, protective layer such as thick till or clay, in the vicinity of the well. Wells located in this type of geologic setting are considered to have a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration from the surface.

For information on current water quality monitoring results, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Refer to Table 1 for additional information regarding the location of the well and activities within the protection areas.

2. Discussion of Land Uses in the Protection Areas

The protection areas for Well #1 (01G) include Route 143, the five-unit apartment building of the ALNT complex as well as three residences south of Route 143. The remainder of the complex and numerous homes are within the IWPA of the well.

Key issues include:

1. **Non-conforming activities within Zone I**
2. **Transportation corridor**
3. **Residential land use**

The overall ranking of susceptibility to contamination for the ALNT supply well (01G) is moderate based on the presence of several moderate ranked potentially threatening land uses or activities in the Zone I and IWPA. Please refer any questions about water quality at the facility to the contact person listed in Table 1.

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Transportation corridor	Yes	Yes	Moderate	Limit road salt usage and provide drainage away from wells.
High density residential	No	Yes	Moderate	Supply BMPs to residents. Manage the property to prevent refuse disposal, parking and hazardous materials and conditions to exist within the Zone I.
Municipal Sewer	Yes	Yes	Low	Notify the Town if leaks are apparent.

*** -For more information, see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

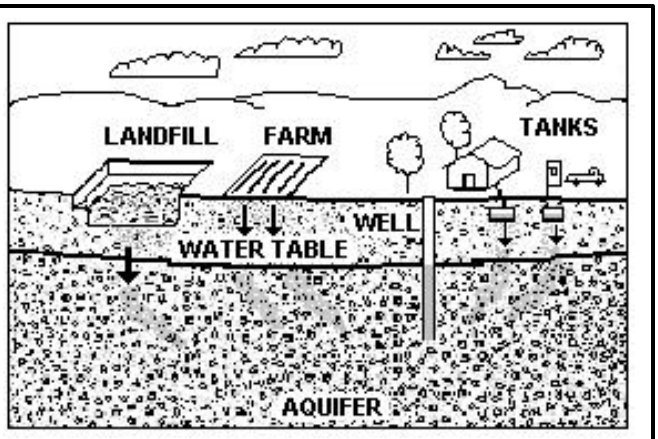

Figure 1: Example of how a well could become contaminated by different land uses and activities.

1. Non-conforming activities within Zone I – The Zone I is the area immediately surrounding the wellhead where only activities associated with supplying water or other non-threatening activities are allowed. The water supplier does not own or control the entire Zone I area. Systems not meeting DEP Zone I requirements for ownership or control, must get DEP approval and address Zone I ownership prior to increasing water use or modifying systems. The Zone I extends across a public road and includes residences.

Zone I Recommendations:

- Continue to control access to the wellhead area.
- Consider relocating the well to a more protected area.
- Use Best Management Practices for handling treatment chemicals and vehicles used to access the area.
- Do not use or store pesticides, fertilizers or road salt within the Zone I.

2. Residential Land Use – There are several residences within the Zone I and the IWPA protection areas. If managed improperly, activities associated with residential areas can contribute to drinking water contamination. The municipal sewer serves the area. Common potential sources of contamination include:

- **Household Hazardous Materials** - Hazardous materials may include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances. Improper use, storage, and disposal of chemical products used in homes are potential sources of contamination.
- **Heating Oil Storage** - If managed improperly, Underground and Aboveground Storage Tanks (USTs and ASTs) and fuel lines can be potential sources of contamination due to leaks or spills of the fuel oil they store.
- **Stormwater** – Catch basins transport stormwater from roadways and adjacent properties to the ground and streams. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Common potential contaminants include lawn chemicals, pet waste, and contaminants from automobile leaks, maintenance, washing, or accidents. Visit the Nonpoint Source pollution web site for additional information and assistance at http://www.state.ma.us/dep/brp/wm/nonpoint.htm.

Residential Land Use Recommendations:

- Educate residents on best management practices (BMPs) for protecting water supplies. Distribute the fact sheet "Residents Protect Drinking Water" available in Appendix A and on www.mass.gov/dep/brp/dws/protect.htm, which provides BMPs for common residential issues.
- Do not allow the accumulation of refuse within the protection areas under your control.
- Prohibit vehicle maintenance and the use of hazardous materials within Zone I.

3. Transportation corridor – The well is located on a state highway that is the main route through the area. The greatest threat from the road is deicing materials, an accidental spill and or illegal access. Although the well is located within a small structure, it is located within 25 feet of the roadway.

Transportation corridor Recommendations:

- Work with the Town to ensure that road runoff is directed where feasible, to an area downgradient and away from the well.
- Prepare an Emergency Response Plan that includes coordination between the DEP, the public water supplier, the Town and State Police in the event of an accident near the wellhead.
- Secure the facilities that the well is in, provide a sanitary seal around the casing to prevent ponding of water and inspect the integrity of the cap and watertight seal regularly.

4. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will further enhance the protection of the well

and minimize its susceptibility to contamination. The Ashmere Lake Nominee Trust should review and adopt the key recommendations above and the following:

Priority Recommendations:

- Monitor activities in the Zone I and IWPA areas.
- Relocate the well if activities cannot be controlled and the water quality is impacted.

Zone I:

- Prohibit any new, non-water supply activities from the Zone I.
- Use BMPs within the Zone I.
- Continue regular inspections of the Zone I. Look for illegal dumping, evidence of access or vandalism.
- Redirect road drainage in the Zone I away from the well area.
- Do not use or store pesticides, fertilizers or road salt within the Zone I.
- Protect the well from flooding.

Training and Education:

- Train staff on proper hazardous material use, disposal, emergency response, and best management practices. Post labels as appropriate on raw materials and hazardous waste.
- Post drinking water protection area signs at key visibility locations away from the immediate wellhead area.
- Educate residents, neighbors and consumers regarding BMPs with respect to household hazardous materials handling and disposal and septic system maintenance.
- Keep areas near transformers free of tree limbs that could endanger the transformer in a storm.
- Manage the property appropriately to prevent hazardous materials and conditions from existing near the well.

Planning:

- Request that the town develop a Wellhead Protection District and associated bylaws and request that the IWPA for your and other water systems be include in the protection area.
- Have a plan to address short-term water shortages and long-term water demands.
- Keep the phone number of a bottled water company readily available in the event of an emergency.
- Supplement the SWAP assessment with additional local information, and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Other Funding Sources:

Other grants and loans are available through the Drinking Water State Revolving Loan Fund, the Clean Water State Revolving Fund, and other sources. For more information on grants and loans, visit the Bureau of Resource Protection's Municipal Services web site at: http://mass.gov/dep/brp/mf/mfpubs.htm. The USDA also has various funding sources for government agencies, non-governmental organizations and agricultural facilities through programs listed on the USDA web site http://search.sc.egov.usda.gov/nrcs.asp?qu=eqip&ct=NRCS. One program in particular, the Environmental Quality Incentives Program (EQIP) may be utilized in a variety of projects from DPW stormwater management to farm nutrient management designed to protect surface and groundwater. Suggest that the town review the fact sheet available online and call the local office of the NRCS for assistance http://www.nrcs.usda.gov/programs/farmbill/2002/pdf/EQIPFct.pdf.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400-foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

For More Information:

Contact Catherine V. Skiba in DEP's Springfield Office at (413) 755-2119 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at: www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been made available to the public water supplier and town boards.

The DEP's Wellhead Protection Grant Program provides funds to assist public water suppliers and their partners in addressing water supply source protection through local projects. Protection recommendations discussed in this document may be eligible for funding under this grant program. If funds are available, in the spring, DEP posts a new Request for Response for the grant program (RFR).

These recommendations are only part of your on-going local drinking water source protection. Citizens and community officials should use this SWAP report to encourage discussion of local drinking water protection measures.

Copies of this report have been forwarded to the water supplier and Town officials.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Areas
- Recommended Source Protection Measures Fact Sheet